



METALLURGICAL TEST REPORT

6870 Highway 42 East
Ghent, KY 41045-9615
(502) 347-6000

Certificate: 666051 08

Mail To:

A.M. CASTLE AND COMPANY
3400 NORTH WOLF ROAD
FRANKLIN PARK IL 60126

Customer: 0032 001

NAS Order: LN 74495 3

Your Order: 118950

Item Code: 14836

Ship To:

A.M. CASTLE AND COMPANY
3400 NORTH WOLF ROAD
FRANKLIN PARK IL 60131

Date: 8/23/2011 Page: 1 Of 1

Steel: 304/304L

Finish: Cold Finish

Dia/Thk: 1.5000 in

Leg Length:

Length: 144.00 in

Corrosion: ASTM A262 Prac A/E OK

[illegible]

ASTM A193/10a-ASME SA193/10 CL 1 GR B8(EXC PAR 7.2)

GRAIN SIZE= 6-8

Round Bar, Annealed, Smooth Turned, Cold Finished

UNS 30400/30403, EN 10204 3.1, ASTM A484/08

ASTM A276/10, ASTM A479/10a, ASTM A182/10 CHEM ONLY.

ASME SA479/10a, ASME SA182/10 CHEM ONLY

AMS 5639H, AMS 5647H, AMS 00S-763B, 00S-763F

REMARKS:

COMPLIES W/REQUIREMENTS OF DEARS EU DIRECTIVE 2002.95.

EC- BOHS- EAF+AQD+CC- NO WELD REPAIR- MELTED AND MEG IN USA

EC: AOM: THE PROBLEM: NO NEEDS ASSESS. REFINED AND BIG BIG FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight
HD99434	2194								

CHEMICAL ANALYSIS

Relat	Supplier #	CM	C	CO	CR	CU	MN	MO	N	NI	P	S
	9NN2	US	.020	.08	18.14	.35	1.34	.28	.076	8.57	.030	.0235
SI												
.24												

MECHANICAL PROPERTIES

1 d o i c f	HB No.	.2YS KSI	UTS KSI	RA %	ELng % 4D
BD99434 R L	158.0	51.58	91.84	71.55	46.07

NAS hereby certifies that the analysis on this certification is correct and the material meets the specifications stated.

QC ENGINEER

ERIC HESS



Castle Metals®

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No:1018982

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL FLEET	BOL No 1018982-5			

Shipment Details		Final Destination Branch - MON	
-------------------------	--	---------------------------------------	--

Order No 1742903	Line No 7	Item No 8448	Description 1.5000.4.0000.RECT.6061.T6511.ALUMINUM.EXT.144.0000 SPECIFICATIONS: AMS QQ-A-200/8, ASTM B221			
Purchase Order No 15065	Part Number		Ordered Qty 12.00 FT	Invoice Qty 12 FT		
Details						
Delivery No. 97710319	Mill KAISER ALUMINUM	Heat Number C5608 207	Mech Id	PCS 1	Width (IN)	Length (IN) 144
					Shipped Qty(LBS) 84.6	

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.						
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.						
Reviewed by Authorized Castle Metals Representative:			Date:		Name:	

Call 10/13

Castle Metals PP

HEAT NUMBER C5608, 207
MECHANICAL ID _____
ITEM CODE 8448
LOT NUMBER _____
PO NUMBER 132603
RECEIPT DATE 9/9/11
SUPPLIER Kaiser
SPECIFICATION _____
LCS NO
COMMENT _____
APPROVED BJ

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
5205 KAISER DRIVE
KALAMAZOO, MI 49048

8/11/13

CUSTOMER PO NUMBER: 132603-1		CUSTOMER PART NUMBER: 8448		PRODUCT DESCRIPTION: 1.500 X 4.000 SC RECT BAR	
KAISER ORDER NUMBER: 602383	LINE ITEM: 001	SHIP DATE: 09/08/2011	KAISER LOT NUMBER: C5608 207	ALLOY: 6061	TEMPER: T6511
WEIGHT SHIPPED: 1016.000 LB	QUANTITY: 12.000 PCS	B/L NUMBER: 601371	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: CASTLE METALS 3400 N. WOLF RD FRANKLIN PARK, IL 60131 USA			SOLD TO: A. M. CASTLE & CO. 1420 KENSINGTON ROAD OAK BROOK, IL 60523 USA		

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CONDUCT.	BEND
XTR000757	0001	1	44.5	42.3	10.1	RE 96	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
L26099	.75	.36	.28	.10	.95	.09	.10	.02	.00	.00	.00	.01	.04

Applicable Requirements:

ASTM-B221-08-STENCILED ASME-SB221 1998 SECT II AMS-QQ-A-200/8 UNS#96061 (T6511 also conforms to T6-not applicable to other tempers)

Miscellaneous Notes

MANUFACTURED IN USA (PLAINFIELD, IL) MELTED IN USA

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

Alex Yeh, Quality & Technology Manager

Alex Yeh

Plant Serial: 00006452

Kaiser Order Number: 602383

Page 1 of 1

Line Item: 001

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No:1018982

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier LOCAL_FLEET	BOL No 1018982-5		

Shipment Details Final Destination Branch - MON

Order No 1742903	Line No 9	Item No 8442	Description 1.5000.2.0000.RECT.6061.T6511.ALUMINUM.EXT.144.0000 SPECIFICATIONS: AMS QQ-A-200/8,ASTM B221			
Purchase Order No 15065	Part Number		Ordered Qty 12.00 FT	Invoice Qty 12 FT		
Details						
Delivery No. 97910310	Mill SERVICE CENTER METALS LLC	Heat Number 201109648	Mech Id	PCS 1	Width (IN)	Length (IN) 144
					Shipped Qty(LBS) 42.24	

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported hereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Date:

Name:



SERVICE CENTER METALS
5850 Quality Way
Prince George, VA 23875

CERTIFIED INSPECTION REPORT AND TEST RESULTS FOR EXTRUDED PRODUCTS

OUR ORDER NUMBER	ITEM
129481	1

BILL TO A. M. SHIP TO A. M.	Castle and Company Castle and Company Quantity Certified	2,052 lbs 48pcs	MANIFEST NUMBER 134848 CUSTOMER PO 118367 CUSTOMER PART NUMBER 8442	DIE NUMBER RB0138 ALLOY/TEMPER 6061-T6511 DESCRIPTION SCRB 1.500X2.000	DATE OF SHIPMENT 7/1/2011 SALESPERSON David Schroeder	CERTIFICATION ASTM-B221-08 StencilContinuous SPECIFICATION AMS-QQA-200/8 SPECIFICATION A96061-20
--------------------------------------	--	--------------------	--	---	--	---

We hereby certify that the material covered by this report has been inspected in accordance with the most recent certification items produced and certified as 6061-T6511 also meet the requirements of 6061-T6 revision, and that samples representative of the material met the composition limits and had the mechanical properties shown. SCM extrusions are manufactured in the USA from ingot melted and cast in the United States or Canada.

Mechanical Properties

Test No.	Lot No.	Test Date	Ultimate Tensile Strength (KSI)	Yield Strength (KSI)	Percent Elongation
1	201109648	06/20/11	46.6	41.3	16.3
2	201109648	06/20/11	45.6	40.1	16.5

8/11/13

HEAT NUMBER Castle Metals KC
MECHANICAL ID 201109648
ITEM CODE 8442
LOT NUMBER 55289
PO NUMBER 118367
RECEIPT DATE 7-1-11
SUPPLIER SCM
SPECIFICATION _____
LCS _____
COMMENT _____
APPROVED CO

Chemical Composition for Aluminum Alloy 6061

Cast Number	Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Melted In
0611003	6061	0.72	0.38	0.31	0.10	0.84	0.12	0.05	0.02	United States of America

Calvin J. Wiggins

Print Date: 7/1/2011

Calvin J. Wiggins, Director of Quality & Technical Services



Castle Metals®

A. M. Castile & Co.

PACKING SLIP

Page 1 of 1

Shipment No:1018982

Ship From: A. M. Castile & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL_FLEET	BOL No 1018982-5			

Shipment Details		Final Destination Branch - MON	
-------------------------	--	---------------------------------------	--

Order No 1742903	Line No 14	Item No 9166	Description 1.2500.2.0000.FLAT.17CR-4NI.STAINLESS.HR.ANN.PICKLE.132.00 00-156.0000 SPECIFICATIONS: AMS 5643, ASME SA564, ASTM A564, UNS S17400				
Purchase Order No 15065	Part Number		Ordered Qty 24.00 FT	Invoice Qty 25.83 FT			
Details							
Delivery No. 97695310	Mill DUNKIRK SPECIALTY STEEL, LLC	Heat Number G17814	Mech Id	PCS 2	Width (IN)	Length (IN) 155	Shipped Qty(LBS) 219.58

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.	
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castile & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.	
Reviewed by Authorized Castle Metals Representative:	Date: Name:

04/10/13



Dunkirk Specialty Steel, LLC
 A Universal Stainless & Alloy Products Company
 P.O. Box 319
 830 Brigham Rd.
 Dunkirk, NY 14048

Quality System Registered to
 ISO9001 and AS9100

Material Certification

MILL ORDER: 0037624
 PART NUMBER: 9166
 P.O. NUMBER: 107110

P.O. DATE: 3/25/2011

PAGE NUMBER: 1 of 1

PRINTED: 7/19/11 10:40

S A. M. CASTLE & CO.
 O T 3400 N. WOLF ROAD
 L O
 D

FRANKLIN PARK, IL 60131-1394

S A.M. CASTLE & CO.
 H T 3400 NORTH WOLF ROAD
 I O
 P

FRANKLIN PARK, IL 60131

Material Description: STAINLESS STEEL FLAT BAR 17-4 HAF+ACD HOT ROLLED ANNEALED PICKLED ASME SA564 (630 condition A), UNS# S17400, Castle AMC 3174-43 Rev. 10, ASTM A564-10 (type 630 condition A), AMS 5643R,

Size: 1.2500 X 2.0000 X 132.0000 MIN/

156.0000 MAX RANDOM LENGTH

Heat Number	PNL	Wt	C	MN	SI	S	P
617814			0.025	0.75	0.27	0.002	0.018
			CR 15.86	W <0.05	V 0.06	NI 4.24	MO 0.19
			CO <0.05	CU 3.26	SN 0.006	EB	CB 0.28
			TA <0.01	AL <0.01	TI <0.01	FE	B <0.001
			O	MC	CA	SE	ER
			AG	BI	N 0.039	H	CQ

REDUCTION RATIO: 384:1

HARDNESS: 345 BHN

H900 CAP: UTS/KSI 205.9 241Y/S KSI 183.8
 REL 12.1 %R/A 42.8 HARDNESS 406 BHN

MAGNETIC PARTICLE: S/S = 0/0

FERRITE: <5

MICRO TEST: ACCEPTABLE

MACRO ETCH TEST: ACCEPTABLE

S - 1

R - 1

C - 1

THIS MATERIAL WAS SOLUTION TREATED AT A MINIMUM TEMPERATURE OF 1900°F FOR AN APPROPRIATE TIME FOLLOWED BY AIR COOLING

COUNTRY OF ORIGIN: USA

Castle Metals FP
 HEAT NUMBER 617814
 MECHANICAL ID
 ITEM CODE 9166
 LOT NUMBER
 PO NUMBER 107110
 RECEIPT DATE 8-16-11
 SUPPLIER Dunkirk
 SPECIFICATION
 LCS
 COMMENT
 APPROVED

/S/John M. Berry

/S/H.J. Gawronski

07/19/11

Prepared by John M. Berry, QA

>H.J. Gawronski, Manager QA

Date

Melted and manufactured in compliance with DFARS 252.225-7014 ALT 1. Melted by USAP in Bridgeville, PA, USA. Certification IAW DIN 50 049 / EN 10204 3.1. Material complies with EU directive 2002/95/EC (RoHS). The test results shown are certified to be a correct statement of records that were derived from testing samples of the material. Results meet applicable specifications. No welding was performed on the material supplied on this order. Material is free from mercury contamination. Material is of NAFTA origin. This material was produced under the Dunkirk Specialty Steel Quality Management System documented in QP Manual, Rev. 5 dated 7/1/2011, conforming to NCA-3800. Material testing was performed as applicable in accordance with ASTM A370, A604, E8, E10, E18, E23, E45, E112, E139, E181, E571, E1019, STP-CHEM-G05, E1444, & AMS 2315. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal Law, Title 18, Chapter 47. Test results are maintained in company records.



Castle Metals®

PACKING SLIP

A. M. Castle & Co.

Page 1 of 1

Shipment No: 1018982

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL_FLEET	BOL No 1018982-5			

Shipment Details

Final Destination Branch - MON

Order No 1742903	Line No 10	Item No 5036	Description 0.5000.2.5000.FLAT.304.STAINLESS.HR.ANN.PICKLE.132.0000-156 .0000 SPECIFICATIONS: AMS QQ-S-763,ASME SA479,ASTM A276,ASTM A479,UNS S30400				
Purchase Order No 15065	Part Number		Ordered Qty 80.00 FT	Invoice Qty 78 FT			
Details							
Delivery No. 97710319	Mill VALBRUNA CORPORATION	Heat Number 249744	Mech Id	PCS 6	Width (IN)	Length (IN) 156	Shipped Qty(LBS) 331.5

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Date:

Name:

PCU/10/13

Castle Metals FP

HEAT NUMBER 249744
MECHANICAL ID _____
ITEM CODE 5036
LOT NUMBER _____
PO NUMBER 22170
RECEIPT DATE 11/9/09
SUPPLIER Valhalla
SPECIFICATION _____
LCS N
COMMENT _____
APPROVED [Signature]

Acciaierie Valbruna S.p.A.



36100 VICENZA (Italia) - Viale della scienza, 25 z.l.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

Cliente / Besteller/Purchaser/Client
VALBRUNA STAINLESS INC.
2400 TAYLOR STREET WEST
46801-FORT WAYNE, IN 46801-USA

Produttore: ACCIAIERIE VALBRUNA S.P.A.
Hersteller/Item/Usine producteur

Oggetto Prove: Descaled Annealed Hotrolled
Prüfungszustand/Item inspected/Finissage

Avviso di Spedizione: D-VI09017354
Lieferantige/Packungslf./A.L.

Ordine nr: 25135 STOCK CAROL STR
Bestellr/Your order/Commande

Tipo di Elaborazione: E+AOD
Erschmelzungsart/Meining process/Mode d'elaboration

CERTIFICATO DI COLLAUDO ABNAHMEPRUEFZEUGNIS INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION EN 10204 (2005) , 3.1

Certificato nr: MEST775704/2009/
Prüfung/Test/Essai

Conferma ordine nr: EI09004279
Werkz/Our Order/Ref. nr.

Marchio di Fabbrica:
Zeichen des Lieferanten
Travailleur
Sigle de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Pointon de l'essayeur



Specifiche:
Anforderungen / Requirements / Exigences

VSI 0 304/304L A
AMS-QQ-S-763 B 304/304L A
ASME SA276 2007 S30400/03 A 2
ASTM A182 2009 S30400/03 A 5
ASTM A276 2008A S30400/03 A
ASTM A370 2008

MIL-S-862 B/1 304/304L
(0) SEC.II PT.A 2007 EDITION ADD. 2008a
(1) SEC.II PT.A 2007 EDITION ADD. 2008a
(3) SEC.II PT.A 2007 EDITION ADD. 2008a
(5) Chemical analysis only and mechanical properties.
(7) * ISO 15156-3

AMS 5639 H S30400 A
ASME SA182 2007 S30400/03 A 0
ASME SA320 2007 B8 CLASS1 3
ASTM A193 2008B B8 CLASS1
ASTM A314 200B S30400/03
ASTM A473 2001 S30400/03 6
NACE MR0175 2003 S30400/03 A 7

0Chemical analysis only and mechanical properties.
2SEC.II PT.A 2007 EDITION ADD. 2008a
4SEC.II PT.A 2007 EDITION ADD. 2008a
6Chemical analysis only.

AMS 5647 H S30403 A
ASME SA193 2007 B8 CLASS1 (1)
ASME SA479 2007 S30400/03 A (4)
ASTM A262 2002A PRACTICE E
ASTM A320 2008 B8 CLASS1
ASTM A479 2008 S30400/03 A
QQ-S-763 F 304/304L A

Qualità: 304/304L
Werkstoff/Grade/Qualité

Marca: AISI

Markenbezeichnung/Brand/Marken

Punzonatura: 304/304L

Kenzeichnung/Marking/Markierung

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descript. du produit	Dimensioni - In Abmessungen Dimensions Dimension	Tolleranza Toleranz Tolerance	Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Losn. Lot nr. Lot nr.
0040	Flat	2,5000 x 0,5000	4B4-06B	144 / 158	249744		4.969	914000240

Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind erfüllt
The material has been furnished in accordance with the requirements
Le matériel a été fourni conforme aux exigences

Controllo antimescolanza: OK
Verwechslungsprüfung: spezialanalytisch durchgeführt
Ausschüttungstest performed: OK
Controllo antimescolanza test: n.a.

Controllo visivo e dimensionale: soddisfatti le esigenze:
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional check: satisfactory
Contrôle visuel et dimensionnel: satisfaisant

TEST ALLO STATO DI FORNITURA Test on delivery condition Prüfung auf lieferbarem produkt test à l'état de fourniture Prueba sobre el material así como entregado										
TEST	Prova/Prüfung Specimen/Proben Longitud. Spec. Werkst. Dm. Dicke Läng. d. spec. mm	°F	Posit. Sagitt. Folien Läng. mm	Snervamento Zugvers. Yield Stress Länge d. stat. Rp 0,2% k.s.l.	Snervamento Zugvers. Yield Stress Länge d. stat. Rp 0,2% k.s.l.	Resistenza Zugvers. Tensile strength Resistenz d. stat. Rm k.s.l.	Allungamento Zugvers. Elongation Allongement E 4d %	Strizione Zugvers. Reduction of area Striction RA %	Resilienza Kerschlagvers. Impact/Vibe Resilience	Durezza Härte Hardness Dureté HB
Valori richiesti 1 Anforderungen/Requisiten Values demandées		min max		30	-	75 115	40	50	-	140 235
A	12,5	68 L		55		93	57	67		184
TEST				min	max					
A	Grain size for ASTM E112						6			

1) L - longitudinal, F - transvers, Q - Tangenziale/longitudinal

Mechanical properties according to ASTM A370.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata-nel Schmelze/Grade	min - max 0,030	1,00	2,00	18,00 20,00	1,00	1,00	8,00 10,50	-	-	0,040	0,020 0,030	0,100	-	-	-	-
C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %						
249744	0,023	0,56	1,64	18,21	0,48	0,53	8,04	0,110	0,032	0,022	0,085					

Produced without class I-II Ozone depleting substances.

Solution heat treated free from continuous carbide network.

Annealing temperature: 1840 °F for 0.5 h/water.

Micro and macro etch test: OK

Vicenza, 25/08/09 VCO008 (Mod. MCER)	Il collaudatore di stabilimento / der Werkssachverständigen / Works inspector / L'agent d'usine M. Rizzotto	Pagina - 1 di 2
--	--	-----------------

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No: 1018982

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL FLEET	BOL No 1018982-5			
Shipment Details							
Final Destination Branch - MON							
Order No 1742903	Line No 12	Item No 21305	Description 0.7500.6.0000.RECT.6061.T6511.ALUMINIUM.EXT.144.0000 SPECIFICATIONS: AMS QQ-A-200/8.ASTM B221				
Purchase Order No 15065	Part Number		Ordered Qty 24.00 FT	Invoice Qty 24.00 FT			
Details		Heat Number 201113791	Mech Id PCS	Width (IN)	Length (IN) 144	Shipped Qty(LBS) 126.96	
Delivery No. 97619317	Mill SERVICE CENTER METALS LLC						
These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.							
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.							
Reviewed by Authorized Castle Metals Representative:				Date:	Name:		

Call 11/14/13



CERTIFIED INSPECTION REPORT AND TEST RESULTS
FOR EXTRUDED PRODUCTS

OFFICE CENTER METALS
5850 Quality Way
Prince George, VA 23875

OUR ORDER NUMBER	ITEM
134584	1

BILL TO A. M. Castle and Company	MANIFEST NUMBER 139765	DIE NUMBER PL0121	DATE OF SHIPMENT 9/9/2011	CERTIFICATION ASTM-B221-08 StencilContinuous
SHIP TO A. M. Castle and Company	CUSTOMER PO 132783	ALLOY / TEMPER 6061-T6511	SALESPERSON David Schroeder	SPECIFICATION AMS-QQA-200/8
Quantity Certified 952 lbs	CUSTOMER PART NUMBER 21305	DESCRIPTION PL .750x6.000		SPECIFICATION A96061-20

We hereby certify that the material covered by this report has been inspected in accordance with the most recent certification revision, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown. SCM extrusions are manufactured in the USA from ingot melted and cast in the United States or Canada.

Mechanical Properties

Test No.	Lot No.	Test Date	Ultimate Tensile Strength (KSI)	Yield Strength (KSI)	Percent Elongation
1	201113791	09/07/11	50.3	46.2	16.6
2	201113791	09/07/11	50.3	46.1	16.7
3	201113791	09/07/11	50.4	45.7	15.3

CASTLE METALS - CLE

HEAT NUMBER 20113791

MECHANICAL ID 21305

ITEM CODE 165283

LOT NUMBER 182783

PS 9-10-11

Scm

JB

Chemical Composition for Aluminum Alloy 6061

Cast Number	Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Melted In
C29J1004	6061	0.72	0.39	0.31	0.09	0.86	0.10	0.01	0.02	United States of America
C29J1017	6061	0.75	0.36	0.34	0.12	0.91	0.10	0.01	0.02	

Calvin J. Wiggins

Calvin J. Wiggins, Director of Quality & Technical Services

Print Date: 9/9/2011

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No: 1018982

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-OCT-2011	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL_FLEET	BOL No 1018982-5			
Shipment Details				Final Destination Branch - MON			
Order No 1742903	Line No 11	Item No 23232	Description 0.7500.8.0000.RECT.6061.T6511.ALUMINUM.EXT.144.0000 SPECIFICATIONS: AMS QQ-A-200/8,ASTM B221				
Purchase Order No 15065	Part Number		Ordered Qty 24.00 FT	Invoice Qty 24 FT			
Details							
Delivery No. 97643333	Mill SERVICE CENTER METALS LLC	Heat Number 201103976	Mech Id	PCS 2	Width (IN)	Length (IN) 144	Shipped Qty(LBS) 170

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material out to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative: _____ Date: _____ Name: _____

ca/10/13



SERVICE CENTER METALS
5850 Quality Way
Prince George, VA 23875

CERTIFIED INSPECTION REPORT AND TEST RESULTS FOR EXTRUDED PRODUCTS

OUR ORDER NUMBER	ITEM
123737	1

BILL TO	MANIFEST NUMBER	DIE NUMBER	DATE OF SHIPMENT
A. M. Castle and Company	127738	PL0183	3/24/2011
SHIP TO	CUSTOMER PO	ALLOY / TEMPER	SALESPERSON
A. M. Castle and Company	101159	6061-T6511	David Schroeder
Quantity Certified	4,572 lbs	54pcs	DESCRIPTION
			PL 750x8.000

CERTIFICATION
ASTM-B221-08 StencilContinuous
SPECIFICATION
AMS-QQA-200/8
SPECIFICATION
A96061-20

We hereby certify that the material covered by this report has been inspected in accordance with the most recent certification revision, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown. SCM extrusions are manufactured in the USA from ingot melted and cast in the United States or Canada.

Items produced and certified as 6061-T6511 also meet the requirements of 6061-T6

Mechanical Properties

Test No.	Lot No.	Test Date	Ultimate Tensile Strength (KSI)	Yield Strength (KSI)	Percent Elongation
1	201103976	03/17/11	51.3	47.4	12.8

Chemical Composition for Aluminum Alloy 6061

Cast Number	Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
C07H0542	6061	0.69	0.27	0.33	0.10	0.87	0.10	0.01	0.01

Melted In
United States of America

Print Date: 3/24/2011

Rev. 9/06/07 - UMS

Calvin J. Wiggins, Director of Quality & Technical Services

Castle Metals FP

HEAT NUMBER 201103976
MECHANICAL ID _____
ITEM CODE 23 232
LOT NUMBER _____
PO NUMBER 101159
RECEIPT DATE 3-29-2011
SUPPLIER SCM
SPECIFICATION _____
LCS ND
COMMENT _____
APPROVED BL